

## Intimate partner violence and risky sexual behaviors among Iranian women with substance use disorders

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### Abstract

**Background:** Intimate partner violence (IPV) and risky sexual behaviors are serious and overlapping public health problems that disproportionately affect drug-involved women. Despite the fact that drug-using women experience extensive IPV, to date, no studies have investigated the association of IPV and risky sexual behaviors among drug-using women in Iran.

**Methods:** Drug-using women (N =120) were recruited from a rehabilitation center in Tehran from March to October, 2009. The Revised Conflict Tactics Scale (CTS2), a standardized questionnaire, was used to collect data regarding violence. We used t-test and logistic regression models to explore the relationship between IPV domains and specific sexual risk behavior outcomes using SPSS 21.

**Results:** The means (sd) for CTS2 domains were as follows: negotiation 4.29 (1.55), psychological violence 2.55 (1.51), sexual violence 0.37 (1.00), physical abuse 1.17 (1.49), injury 2.18 (1.97), and the mean total score was 1.69 (0.96). We found significantly higher injury scores, but lower sexual abuse scores among women with sexually-transmitted infection (STI) compared to women without STI (p-values 0.030 and <0.0001, respectively). In addition, we found that psychological abuse was positively associated with STI (p-value 0.03) and increased condom use (p = 0.010), possibly mediated through an increased likelihood of having multiple partners.

**Conclusion:** The findings revealed that in Iran drug-involved women experience high rates of IPV and that IPV is associated with increased risky sexual behavior. Implication: Preventive interventions for violence that are integrated within drug treatment programs, as well as harm reduction programs are highly recommended.

**Keywords:** Intimate Partner Violence, Drug-use, Iranian women.

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### Introduction

Intimate partner violence (IPV) is a serious public health concern that disproportionately affects drug-abusing women (1-3). Large-scale epidemiological studies ex-

amining the co-occur of IPV and drug abuse have been conducted in developed and developing countries (4). One study investigated 1,158 female injecting drug users (IDUs) in India and found that over

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half (55.5%) endorsed a history of IPV and the majority (86.0%) endorsed a history of sexual violence (2). In a survey among Uganda women (N = 1,743), rates of physical violence were 6 times higher among women with alcohol abusing partners, as opposed to non-alcohol abusing partners (5). Secondary analysis of data from the 10 countries (2000-2003) included in the World Health Organization (WHO) multi-country study on Women's Health and Domestic Violence (N = 24,097) identified IPV as a multi-factorial and multi-faceted phenomenon in diverse societies (6).

Several studies have attempted to shed light on the mechanisms linking IPV, drug use and risky sexual behaviors (7-9). In a qualitative study, 31 Latina and African-American women were individually interviewed. Women in methadone maintenance treatment programs all reported physical or sexual violence by an intimate partner during the past year. The majority, 83.8 % (n = 26), reported some drug involvement in the recent events. Furthermore, 40% reported that the violence occurred while both the man and woman were under the influence of drugs. The women's narratives revealed a number of different relationships between the use of mood-altering drugs at the time of violence and the occurrence of coerced, unprotected sex (8). In contrast, interviews with the Hispanic women in this study did not reveal a direct relationship between the participant's as well as her partner's substance use during sexual intercourse and the participant's condom use or history of STIs (10).

IPV is associated with a wide range of negative outcomes, including substance abuse, physical injuries, depression, post-traumatic stress disorder (PTSD), suicide, unwanted pregnancies and sexually transmitted diseases (1, 11, 12). Sexually transmitted infections (STIs) and STI-related risk behaviors are highly prevalent among female IPV victims (12). Out of 3.5 million Californian adults victimized by IPV, over half a million report serious psychological distress (SPD) in the past year. In addition,

about half of the victims' partners were under the influence of alcohol or other drugs during the most recent incident (13).

Iranian women are exposed to all types of violence (14). In particular, high rates of violence (72.8%) have been revealed among Iranian sex workers (15). Cultural attitudes toward the use of substances were found to affect the type and amount of IPV (16). Similar to other societies (1), multiple factors influence the development of risky sexual behaviors among women in the context of IPV: gender inequality, underpowered women, sexual coercion, fear of amplified violence, negotiation for safe sex, extradyadic relationships, involvement in commercial sex working, marital dependencies and lack of social support (5, 15, 17-21). Despite extensive IPV among drug using women, to date, no studies have investigated the association of IPV and sexually risk behaviors among drug-using women in Iran. The purpose of this study was to investigate the relationship between IPV and risky sexual behavior in this particular clinical population. The results are generalizable to similar clinical populations although populations in other types of clinics and in other geographical/sociocultural contexts may be different.

## Methods

### *Participants*

Participants were 120 treatment-seeking women presenting to a drug rehabilitation center in Tehran, Iran. The treatment facility is one of the drug treatment centers in Tehran that is supported by the City Council. After being admitted to the rehabilitation center, women were supposed to stay in for a period of 28 to 60 days depending on their status and need and received drug-free detoxification, housing, food, 12 step counseling program and religious and spiritual classes. All women presenting at the rehabilitation center (n = 128) were approached for the study. They completed the questionnaire in the first weeks of admission to the center. Eligibility criteria for this study included: 1) heterosexual activity in

the last 12 months, 2) lifetime exposure to IPV by a husband or intimate partner, and 3) ability to provide informed consent. Three women refused to be interviewed; four women did not complete the interview due to poor health and one woman identified herself as a lesbian and was excluded from the study. Approval for this study was obtained from the Human Research Ethics Committee of Iran University of Medical Sciences (IUMS).

### *Procedure*

Recruitment was conducted using convenience sampling. A trained female research assistant was introduced to every woman admitted to the clinic during a four-month period (six days per week) by the director. She invited them to participate in a study investigating associations between IPV and risky sexual behaviors. After obtaining informed consent, the research assistant met with each participant in a private room for approximately 30 minutes. To ensure confidentiality, all the participants were kept anonymous.

### *Instruments*

A survey including 24 items was created for the purposes of this study. These items were designed to assess socio-demographics (Question 1 to Question 11), risky sexual behaviors (Question 12 to Question 18) and drug-related information (Question 19 to Question 24).

**Demographics:** The following demographics were assessed and used as covariates in the analyses when appropriate: age, ethnicity, education level, annual income (based on the level of income in the past 12 months), employment status, relationship status, homelessness, number of children and physical health.

**Substance use:** Six questions (Question 19 to Question 24) were used to assess age of onset of alcohol/drug use, drug of choice, route of administration, treatment history and partner's lifetime and current substance abuse history. **Risky sexual behaviors:** seven questions (Question 12 to

Question 18) assessed sexual behaviors, including: age of first sexual experience, length of sexual activity, type of intimate partner (e.g. husband, boyfriend, casual partner, legal temporary partner (In Sh'ia tradition temporary marriage permitted known as *sigh* that allows a couple to specify the terms of their relationship; can last from a few hours to 99 years)), number of sexual partners, sexually transmitted disease (self-report and clinical symptoms) and condom use.

The Revised Conflict Tactics Scale (CTS2), a 74-item self-report instrument, was used to measure IPV during the last twelve months. The CTS2 classifies conflict on six levels based on the number of violent episodes during the intimate relationship: Level 1-2 = 1-2 episodes, Level 3 = up to 5 episodes, Level 4 = up to 10 episodes, Level 5 = 11 to 20 episodes, and Level 6 = more than 20 episodes. A score of  $>25$  is considered severe IPV. Overall, the CTS2 is divided into five domains: physical assault, injury, psychological aggression, negotiation and sexual coercion. For each violent behavior, the question is asked both with regard to perpetration and victimization. Women who reported committing violent behaviors in the past year were considered IPV perpetrators and were considered victims if their partners perpetrated violent behaviors against them. Women could therefore be classified as victims only, perpetrators only, neither, or both (3).

For the purposes of this study, the CTS2 was translated into Farsi and then translated back into English. The Farsi version was reviewed by eight scholars who are experts in gender, health and substance abuse research. The Farsi version was then pilot-tested for content validity. Reliability was estimated using 10 women from the center who completed the questionnaire twice at a two week interval. Internal consistency of the total scale scores was satisfactory (Cronbach's  $\alpha$  of 0.73.). However, subscale alphas ranged from .56 to .80.

### Statistical Analysis

Our main goal in the analysis was to determine whether higher levels of IPV were associated with higher-risk sexual behaviors in the studied women. Therefore, in bivariate analyses, we examined the predictors of sexual risk behaviors, including the five domains of IPV, as well as demographic and drug-related characteristics. In these analyses, we used t-test to evaluate group differences in CTS2 domain scores (for example, by condom use and by STI status). To explore the relationship between IPV domains and specific sexual risk behavior outcomes, while controlling for clinical and socio-demographic factors of interest, we fit a series of logistic regression models. We included all women in these analyses, allowing us to estimate adjusted odds ratios for each predictor of interest. We adopted a backwards-stepwise strategy for model building. We retained variables in the model based on significant prediction of the outcome, or confounding of the main predictor of interest. We used a nominal p-value of 0.05 to indicate a significant pre-

diction of the outcome measure by each covariate. We identified confounders based on the criterion of a 20% change in the regression coefficient for the main effect. In addition, we tested covariates for effect modification of the main effect by fitting an interaction term, employing a nominal p-value of 0.05 to indicate significant effect modification. We used IBM SPSS version 21 (IBM Corp., Armonk, NY, USA) and SAS Enterprise Guide version 4.3 (SAS Institute Inc., Cary, NC, USA) for all analyses.

### Results

The majority of women were unemployed (76.6%) and had less than a high school education (60.8%). About 87 women (72.5%) reported living with a drug-using husband. Approximately half of the participants ( $n = 60$ ) reported only one current sexual partner. About 117 women abused drugs (97.5%; most common drug of choice was opiates) and had never received substance abuse treatment (67.5%) (Table 1).

Table 1. Frequency distribution of variables: 120 Iranian women with substance use disorders

Variable	Category	N (%)
Education	High school or above	55 (46%)
	Less than high school	60 (50%)
	Illiterate	5 (4%)
Substance use	Heroin	43 (36%)
	Hashish	66 (55%)
	Cocaine	25 (21%)
	Ecstasy	31 (26%)
	Alcohol	73 (61%)
	Other	4 (3%)
	Any substance	92 (77%)
*Marital status	Permanent marriage	57 (47.5%)
	Permanent remarriage	7 (5.8%)
	Temporary marriage	1 (0.8%)
	Single	20 (16.7%)
	Divorced	27 (22.5%)
Income (self report)	Sufficient	56 (46.7%)
	Insufficient	64 (53.3%)

\*Missing data= 8 cases

Table 2. Discriptive statistics of variables: 120 Iranian women with substance use disorders

Variable	Category	Mean (sd)
Age	-	31.2 (8.10)
Abuse (CTS2 scores)	Physical	1.2 (1.49)
	Sexual	0.4 (1.00)
	Psychological	2.5 (1.51)
	Negotiation	4.3 (1.55)
	Injuries	2.2 (1.97)
	Total abuse	1.7 (0.96)

Table 3. Associations between CTS2 domains and clinically diagnosed sexually transmitted infection: 120 Iranian women with substance use disorders

Domain	STI (n)	Domain Score	p
Negotiation	Yes (2)	4.90	0.570
	No (118)	4.28	
	Total (120)	4.29	
Psychological	Yes (2)	4.81	0.030
	No (98)	2.51	
	Total (100)	2.55	
Sexual	Yes (2)	0	<0.001
	No (118)	0.38	
	Total (120)	0.37	
Physical	Yes (2)	1.59	0.690
	No (118)	1.16	
	Total (120)	1.17	
Injury	Yes (2)	5.25	0.030
	No (117)	2.13	
	Total (119)	2.18	
Total	Yes (2)	2.41	0.280
	No (117)	1.68	
	Total (119)	1.69	

Table 4. Associations between CTS2 domains and condom use: 120 Iranian women with substance use disorders

Domain	Any Condom Use	Domain Score	P-value	Odds Ratio <sup>1</sup> (95% CI)
Negotiation	Yes (54)	4.39	0.60	1.1 (0.84, 1.3)
	No (65)	4.24		
Psychological	Yes (51)	2.92	0.01	1.4 (1.1, 1.9)
	No (49)	2.17		
Sexual	Yes (54)	0.41	0.65	1.1 (0.75, 1.6)
	No (65)	0.33		
Physical	Yes (54)	1.10	0.61	0.94 (0.73, 1.2)
	No (65)	1.24		
Injury	Yes (54)	2.07	0.54	0.94 (0.78, 1.1)
	No (64)	2.29		
Total	Yes (54)	1.71	0.79	1.1 (0.72, 1.5)
	No (64)	1.67		

<sup>1</sup>Odds ratio (and 95% confidence interval) for any condom use relative to a one-unit increase in the CTS2 domain score

All women were classified as IPV victims and none of them were classified as IPV perpetrators. The overall CTS score for all dimensions was 1.69, negotiation 4.29, psychological aggression 2.55, sexual coercion 0.37, physical assault 1.17 and injury 2.18 (Table 2). Regarding abuse domains, all 120 women had data for negotiation, sexual abuse and physical abuse. However, one missing value was observed for injury, and 20 missing values for psychological abuse. We present results for non-missing data and did not impute any values.

As shown in Table 2, in unadjusted analyses, women with clinic-recorded sexually transmitted infections (STI) ( $n = 2$ ) had significantly worse (higher) scores than other participants on the psychological abuse domain (4.81 vs. 2.51,  $p = 0.03$ ), and the injury abuse domain of the CTS2 (5.25

vs. 2.13,  $p = 0.03$ ). However, these women had better (lower) scores on the sexual abuse domain (0 vs. 0.38,  $p < 0.0001$ ) (Table 3). When including self-reported STI in addition to clinic-recorded occurrence of STI, we found that 22 of 120 women had STIs. In contrast to the results using clinic-recorded STI alone, when we combined self-reported and clinic-recorded STI, we did not find significant associations between STI and any abuse measure (negotiation, psychological, physical, sexual, injury, verbal violence or total abuse).

In examining the relationship between specific drugs of choice and sexual behavior, we found that women reporting use of Ecstasy “sometimes” were much more likely to use condoms than those reporting no Ecstasy use; this relationship did not extend to the few ( $n = 6$ ) women reporting Ecstasy use “always”.



Table 5. Results of multivariable logistic regression: Relationship between psychological abuse and condom use: 120 Iranian women with substance use disorders

Variable	OR	Adjusted	
		95% CI	p
Psychological abuse	1.3	0.95, 1.80	0.100
Married	0.76	0.25, 2.30	0.620
Age (years)	0.96	0.90, 1.02	0.230
Ecstasy use	2.7	0.99, 7.50	0.052
Number of partners	4.3	1.40, 13.70	0.010

In Table 4, we present the associations between specific abuse domains and condom use. We found a significant association between increased psychological abuse and increased condom use (OR=1.4). Other abuse scales, as well as total abuse, did not show any significant association with condom use (Table 4). We fit a series of logistic regression models to further explore the relationship between specific abuse domains and condom use, testing other socio-demographic and clinical variables of interest for possible confounding and effect modification of the observed association. In general, adjusted results were similar to the unadjusted results, and consistent with Table 4. In adjusted models we found no significant association between condom use and abuse domains other than psychological abuse. To further explore the association between psychological abuse and increased condom use, we fit a series of multivariable logistic regression models with psychological abuse (on a continuous scale) predicting condom use (any vs. none). We found that the association was attenuated and no longer significant after controlling for the number of sexual partners. Other clinical and socio-demographic variables of interest did not produce confounding of the association. We noted that the number of sexual partners was monotonically associated with psychological abuse although the trend did not reach statistical significance, with abuse scores of 2.46, 2.74, and 2.96 for <5 partners, 5-10 partners and >10 partners, respectively (p-value for trend 0.28). More importantly, the number of partners were monotonically related to both "any condom use" (37%, 67%, and 100% for <5, 5-10, and >10 partners, respectively;  $p<0.001$ ) and "100% condom use" (13%,

33%, and 90%, respectively;  $p<0.001$ ). Given the broad categories for the number of sexual partners, and its possible role as a proxy variable for other aspects of sexual behavior, including sex work, it is possible that the elevated (although no longer statistically significant) observed odds ratio may be partly explained by residual confounding.

In our final model by multivariable logistic regression for psychological abuse predicting any condom use, the adjusted odds ratio between psychological abuse and condom use was 1.3 (95% CI: 0.95, 1.8), adjusting for marital status, age, illicit use of Ecstasy and number of sexual partners (Table 5).

### Discussion

The current study investigated the relationship between IPV and risky sexual behaviors among drug-abusing women in Iran. The findings revealed high rates of exposure to IPV. In fact, 100% of the women who participated in this study reported IPV. In a study conducted on 15-64 year old women (N = 702) attending public obstetrics, gynecology and family planning health services in Kazeroon, it was found that IPV in the form of psychological, physical and sexual abuse is prevalent (43.7%, 82.6%, and 30.9%, respectively) (17). Similarly, 2,400 married women attending public clinics were screened for IPV in Babol, North of Iran. Physical, sexual and psychological abuses were prevalent (15.0%, 42.4%, and 81.5%, respectively) (22). These two studies found a relationship between IPV victimization and women's poor socio-economic situations. Previously, poor socio-economic state has been pointed out as an important contextual

variable associated with higher risk of IPV amongst women (21).

One possible explanation for the prevalence of IPV among Iranian women could be related to the fundamental balance of power characterized by marital relationships, as well as socio-demographic traits. Women who are IPV victims may have less negotiating power in their relationships than women in non-violent relationships. This is supported by studies conducted on Iranian women from different provinces that found female IPV victims are less empowered and more socio-economically deprived (17, 22, 23). Fear of violent revenge has been found to be another reason for women's lessened power to negotiate condom use in their sexual encounters (24). Similarly, sexual relationship power has been found to be a mediator of the association between IPV and STIs (25, 26).

This analysis also revealed an association between IPV and STIs in the drug abusing women. Earlier studies also reported that substance use is a risk factor for STIs acquisition and also drug abusing IPV victims may be at increased risk of exposure to an STIs (2, 7, 10, 12, 27). Contrary to our findings, a study conducted with drug using women (N = 244) in New York City indicated that IPV experience was not related to women's condom use decision (28).

The current study revealed a significant association between increased psychological abuse and increased condom use: specifically, women with a higher number of sexual partners were more likely to have experienced psychological abuse. Having control over decision making in the relationship (26) is one possible explanation for this finding. A study with 112 women at risk of HIV/AIDS examined the relationship of power and decision making regarding condom use. In this study, although no significant association was found between the relationship power and condom use, those women made decisions themselves or with the partner to use condoms more compared to those women who reported that

their partner made such decisions (29).

Our findings revealed that women who sometime used ecstasy were more likely to use condoms. To some extent this is a promising finding since it shows an effort on the part of women who probably are multi-partnered to protect themselves and their partners from HIV and other sexually transmitted infections. A study also showed greater rates of condom use among ecstasy users in the state of Georgia in the United States (30). Other studies also reported an association between any type of illicit drugs and sexual risk behaviors. Boyd et al. (2003) found that the number of sexual partners was related to ecstasy use among college students (31).

To our knowledge, this is the first study to examine the relationship between sexual risk behaviors, STIs and drug use among IPV victimized women in Iran. Although our findings offer additional insight into the complex relationship between substance use, IPV and sexual risk behaviors, we acknowledge a few potential limitations in this study. First, the well-known scale CST2 could be culturally incompatible for use in the Iranian context, given that Iranian women conceptualize violence differently. Second, the data collected in this study of drug-abusing women were all based on uncorroborated self-reports, in which women were asked to report events up to one year in the past. Therefore, the extent to which respondents underreported or over-reported their experiences of IPV and sexual risk behaviors is unknown. A third possible limitation of these data comes from the sampling strategy used. All interviews were conducted in one rehabilitation center, West Tehran. There may be some differences between these women and those residing elsewhere, and this could affect the generalizability of the data. Finally, it may be possible that women with risky sexual behavior were more or less likely than other women to over-report IPV measures. Little or no information has been published on this topic to guide our interpretation. When conducting this study,

we worked to minimize recall bias by encouraging the participants to respond to all questions as accurately as they could.

### Conclusion

Preventive interventions for violence that are integrated within drug treatment programs, as well as harm reduction programs are highly recommended. In Iranian culture, IPV is conceptualized differently from many other societies. Iranian women, in particular drug-using women, need to be empowered to develop sexual awareness and assertiveness. Capacity building for drug treatment professionals that would enable them to deliver culturally appropriate services to couples would also be beneficial.

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